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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/509,183

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Paraskevas Tsobanakis

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EXAMINER

HANLEY, SUSAN MARIE

ART UNIT

PAPER NUMBER

1651

MAIL DATE

DELIVERY MODE

04/21/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/509,183	TSOBANAKIS ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	SUSAN HANLEY	1651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-28 and 31-49 is/are pending in the application.
- 4a) Of the above claim(s) 1-27, 34 and 37-49 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 28,31-33,35 and 36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                      |                                                                   |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____                                                          | 6) <input type="checkbox"/> Other: _____                          |

**/Sandra Saucier/**

**Primary Examiner, Art Unit 1651 DETAILED ACTION**

Claims 1-28 and 31-49 are pending.

***Election/Restrictions***

Applicant's election of Group III, claims 28-36, and 3-hydroxypropionic acid as the  $\alpha,\beta$ -unsaturated carboxylic acid without traverse in the reply filed on 3/11/08 is again acknowledged. Claims 1-27, 34 and 37-49 stand withdrawn.

Claims 28, 31-33, 35 and 36 are under examination.

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action. The reasons for the rejections can be found in the previous office action.

Claims 28, 32, 33, 35 and 36 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Gokarn (US 7,186,541) in view of Argyropolous et al. (US 4,970,334).

Applicant argues that one of skill in the art when faced with how to dehydrate a 3-hydroxycarboxylic acid would not look to Argyropolous et al., which does not teach or disclose such acids. Applicant asserts that in Gokarn et al., the catalyst is added to the reactor with the reactants and there is no indication that it would be at a higher temperature than the solution. Applicant concludes that this is very different from Applicants' currently claimed invention where the heated surface comprising the dehydration catalyst heats the solution.

Responding to Applicant's argument that Argyropolous do not teach the use of an acid, Applicant is directed to the use of acid catalysts such as p-toluenesulfonic acid, sodium hydrogen sulfate, etc., (col. 5, lines 43-55). In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the catalyst is not added to the reactor with the reactants, that the catalyst would be at a higher temperature than the solution and that the heated surface comprising the dehydration catalyst heats the solution) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Claims 28, 32, 33, 35 and 36 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Gokarn (US 7,186,541) in view of Bartoli et al. (2000).

Applicant argues that while Bartoli et al. discloses that the suspension is refluxed, there is no indication regarding how the reflux is caused to occur and what type of heat source may be used. Applicant asserts that even if the cesium chloride is passively heated, it would not be at a higher temperature relative to the solution (i.e., the cesium chloride would not heat the solution). Applicant argues that Bartoli et al. is very different from Applicants' current invention, where the heated surface comprising the catalyst heats the solution and converts the 13-hydroxycarboxylic acid to an  $\alpha,\beta$ -unsaturated carboxylic acid. Applicant puts forth that the cesium chloride in the Bartoli et al. system is not a catalyst, it is a reagent, as indicated in the abstract of Bartoli et al.

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In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., how the reflux is caused to occur, what type of heat source may be used, that cesium chloride would not heat the solution since it is not at a higher temperature and that the heated surface comprising the catalyst heats the solution) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Responding to Applicant's assertion that cesium chloride in the Bartoli et al. system is not a catalyst and that it is a reagent, Applicant's arguments are allegations without factual support, and therefore are non-persuasive.

Claims 28, 32, 33, 35 and 36 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Gokarn (US 7,186,541) in view of Bartoli et al. (2000), as applied to claims 28, 32, 33, 35 and 36, in further view of Ishida et al. (JP363313739).

The combined disclosures by Gokarn and Bartoli are discussed in the previous Office action.

The combined disclosures do not teach that the dehydration catalyst forms a bed.

Ishida et al. teach that a zeolite containing cesium or rubidium is a catalyst that dehydrates 1-cyclohexylethanol to produce vinylcyclohexane. The cesium or rubidium

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catalyst is in a fixed or fluidized bed which allows for high selectivity and reproducibility in the dehydration process (English abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to carry out the dehydration process of Gokarn and Bartoli using a cesium catalytic bed. The ordinary artisan would have been motivated to do so because the use of the bed promotes high selectivity and reproducibility for dehydration processes. The ordinary artisan would have had a reasonable expectation that one could utilize a cesium bed in the dehydration process of Gokarn and Bartoli because both processes are drawn to dehydration of an alcohol with a cesium catalyst to produce a double bond.

### ***Double Patenting***

Claims 28, 32, 33, 35 and 36 stand provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 14 of copending Application No. 11/377,052 in view of Gokarn (US 7,186,541). (Claims 2, 4 and 11-13 were cancelled in the '052 application.)

Claims 28, 32, 33, 35 and 36 stand provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 4 of copending Application No. 11/376,936 in view of Gokarn (US 7,186,541). (Claims 2 and 4-7 were cancelled in the '936 application).

Applicant argues that it would be premature to address the provisional double patenting rejections set forth in the Office Action and that when the Examiner has indicated that the claims of the current case are allowable, Applicant will address the

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obviousness type double patenting rejections and file a terminal disclaimer, if appropriate.

Applicant's argument is not directed to the factual basis of the rejection and is, therefore, non-persuasive.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SUSAN HANLEY whose telephone number is (571)272-2508. The examiner can normally be reached on M-F 9:00-5:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Wityshyn can be reached on 571-272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sandra Saucier/

Primary Examiner, Art Unit 1651

/Susan Hanley/  
Examiner, Art Unit 1651